

WHAT IS CLAIMED IS:

1. An explosion protection venting system having a plurality of vessels, each of said plurality of vessels having a vent in fluid communications with a common connection line between said plurality of vessels, said explosion protection venting system comprising:

a flame front diverter connected to each one of said plurality of vessels, said flame front diverter having an elongated channel having opposing first and second end portions and a rupturable disc in fluid communications with said elongated channel mounted to each of said opposing first and second end portions; and,

first and second vapor flow channels disposed in said elongated channel, wherein either of said first and second vapor flow channels being connected to said common connection line to receive process vapor and to form a primary flow path for process vapor propagation between said elongated channel and the other of said first and second vapor flow channels to a downstream process;

whereby effluent produced by excessive pressure caused by combustion of said process vapor is diverted away from said primary flow path and through one of said rupturable disc which ruptures outwardly from said elongated channel, and whereby the other of said rupturable disc ruptures inwardly of said elongated channel causing an instantaneous stream of outside air to flow inwardly of said elongated channel between each of said rupturable discs thereby interrupting the combustion process.

2. The explosion protection venting system recited in claim 1 wherein said rupturable discs are each bi-directional relative to said elongated channel.

3. The explosion protection venting system wherein each one of said rupturable discs is capable of rupturing at a pressure of not more than about 5 psig.

4. The explosion protection venting system recited in claim 1 wherein said elongated channel has a wall thickness of at least 0.237 inches and said vapor flow channels has a wall thickness of at least 0.139 inches.

5. The explosion protection venting system recited in claim 1 wherein said vapor flow channels are welded to said elongated channel.

6. The explosion protection venting system recited in claim 4 wherein said elongated channel has a diameter of about 4 inches and said vapor flow channels each has a diameter of about 2 inches.

7. The explosion protection venting system recited in claim 1 wherein each of said rupturable discs is sandwiched between a pair of opposing flanges fixedly mounted to said elongated channel.

8. The explosion protection venting system recited in claim 7 wherein said pair of opposing flanges has a diameter of about 4 inches and a force rating of 150 lbs.